IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claims 1 to 11 (canceled).

Claim 12 (currently amended): A fuel assembly for a pressurized water nuclear reactor, comprising:

fuel rods which are arranged at nodes of a substantially regular network having a polygonal outer contour, the fuel rods containing uranium which is enriched in isotope 235 and not containing any plutonium before the assembly is used in a reactor, wherein the rods are distributed in [[th]]at least:

a first central group which is constituted by fuel rods which have a first level of nuclear reactivity; and

an outer peripheral layer of fuel rods distributed in:

a second group of fuel rods that extend along faces of the outer contour of the network and that have a second level of nuclear reactivity that is strictly less than the first level of nuclear reactivity; and

a third group of fuel rods that are arranged at corners of the outer contour of the network and that have a third level of nuclear reactivity that is strictly less than the second level of nuclear reactivity

wherein the outer peripheral layer of fuel rods defines an outer periphery of the fuel assembly.

Claim 13 (previously presented): The fuel assembly according to claim 12, wherein first central group has rods which contain a neutron contaminant.

Claim 14 (currently amended): The fuel assembly according to claim 12, wherein the second group extends, for each of the faces of the outer contour of the network of fuel rods, from one corner to the other of the face in question, and ~~in that~~ the third group comprises only the fuel rods that are arranged in the corners of the outer contour of the network of fuel rods.

Claim 15 (previously presented): The fuel assembly according to claim 12, wherein the different levels of nuclear reactivity of the fuel rods of the groups are obtained by different masses of uranium 235 in the fuel rods.

Claim 16 (previously presented): The fuel assembly according to claim 15, wherein the different levels of nuclear reactivity of the fuel rods of the groups are obtained by the fuel rods having different levels of enrichment in uranium 235.

Claim 17 (previously presented): The fuel assembly according to claim 16, wherein the rods of the first group have a first level of enrichment e1 in uranium 235, the rods in the second group have a second level of enrichment e2 in uranium 235 strictly less than the first level of enrichment e1 and the rods of the third group have a third level of enrichment e3 in uranium 235 that is strictly less than the second level of enrichment e2.

Claim 18 (previously presented): The fuel assembly according to claim 17, wherein the second level of enrichment e2 is between e1 - .8% and e1 - .2%.

Claim 19 (previously presented): The fuel assembly according to claim 17, wherein the third level of enrichment e3 is between e1 - 1.8% and e1 - .6%.

Claim 20 (previously presented): The fuel assembly according to claim 17, wherein the first level of enrichment e1 is between 3% and 6%.

Claim 21 (previously presented): The fuel assembly according to claim 12, wherein the fuel rod network has a square outer contour.

Claim 22 (currently amended): A nuclear reactor core, comprising:

at least two fuel assemblies, wherein each of the at least two fuel assemblies comprises fuel rods which are arranged at nodes of a substantially regular network having a polygonal outer contour, the fuel rods containing uranium which is enriched in isotope 235 and not containing any plutonium before the assembly is used in a reactor, wherein the rods are distributed in [[th]]at least:

a first central group which is constituted by fuel rods which have a first level of nuclear reactivity, and

an outer peripheral layer of fuel rods distributed in:

a second group of fuel rods that extend along faces of the outer contour of the network and that have a second level of nuclear reactivity that is strictly less than the first level of nuclear reactivity; and

a third group of fuel rods that are arranged at corners of the outer contour of the network and that have a third level of nuclear reactivity that is strictly less than the second level of nuclear reactivity

wherein the outer peripheral layer of fuel rods defines an outer periphery of the fuel assembly.

Claim 23 (previously presented): The fuel assembly according to claim 22, wherein the first central group has rods which comprise a neutron contaminant.

Claim 24 (previously presented): The fuel assembly according to claim 22, further comprising a skeleton, the skeleton having a lower tie plate, an upper tie plate and guide tubes for receiving rods of a control rod cluster, the guide tubes connecting the lower tie plate and the upper tie plate.

Claim 25 (previously presented): The fuel assembly according to claim 22, further comprising a skeleton, the skeleton having a lower plate, upper plate and guide tubes, the guide tubes connecting the lower plate and the upper plate.

Claim 26 (previously presented): The fuel assembly as recited in claim 12 wherein the fuel assemblies are in a 17 by 17 configuration.

Claim 27 (previously presented): The fuel assembly as recited in claim 12 wherein the fuel assemblies are at least in a 14 by 14 configuration.

Claim 28 (previously presented): The fuel assembly as recited in claim 12 wherein the fuel assemblies are in a 14 by 14 configuration.

Claim 29 (previously presented): The fuel assembly as recited in claim 12 wherein the fuel assemblies are in a 15 by 15 configuration.